De La Salle University- Manila
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Navigating Sustainable Paths: Exploring the Gameplay Mechanics of Sustainable Seekers

A Term Project

Presented to Engr. Ramon Stephen Ruiz

In Partial Fulfillment of the

Requirements for the Course Object Oriented Programming Laboratory (LBYCPEI)

by

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June 2023

I. Introduction

In today's world, the need for sustainable cities and communities has become increasingly crucial. Rapid urbanization, coupled with environmental concerns, has created a pressing need for innovative solutions that address the challenges of urban living. “Sustainable Seekers” tackles this problem by leveraging the power of gaming to educate and inspire individuals to adopt sustainable transportation options, reduce carbon footprints, and make informed choices regarding urban mobility.

The primary goal of Sustainable Seekers is to raise awareness about sustainable transportation and eco-friendly urban infrastructure while engaging players in an enjoyable gaming experience. By creating a virtual city that mirrors real-life scenarios, the game aims to:

1. Encourage players to use sustainable transportation methods such as walking, cycling, or public transit.
2. Educate players about the environmental and social benefits of eco-friendly travel practices.
3. Foster an understanding of the impact of transportation choices on urban development and sustainability.
4. Motivate players to adopt sustainable habits and make conscious decisions to build a more sustainable future.

Pollution, traffic, and ineffective transportation systems are a few of the prevalent issues that the modern urban environment must deal with. In order to solve these issues, Sustainable Seekers offers:

1. Interactive Map: Players can explore sustainable locations and find the quickest routes to get there using an interactive map as they move around a virtual city.
2. Level Progression: The game introduces progressive levels that offer progressively more difficult challenges and promote skill growth.
3. Obstacle challenges require players to get past a variety of barriers and obstacles that simulate difficulties encountered in urban settings.
4. Rewards and Incentives: Throughout the game, players can earn rewards and achievements, which encourages continued play and reinforces good behavior.

The scope of Sustainable Seekers includes the development of a Java-based 2D game with the following features and functionalities:

1. Engaging gameplay mechanics that incorporate sustainable transportation elements.
2. Interactive map with virtual city exploration and route-finding capabilities.
3. Progressive levels and obstacle challenges to keep players motivated and entertained.
4. Educational elements providing information on sustainable practices and their impact.
5. Rewards and incentives to promote positive behavior change and player engagement.

II. Methodology

As the group's goal is to raise awareness towards public transportation over pollution-inducing vehicles, The project will use parts of the virtual interactive game that provide multiple methods the player can use to move around a city, giving the player the ability to use their preferred method of public transportation in real life. According to a research conducted in

2019 (Fallon, G.), a hands-on simulation is an effective method of teaching as it was motivating, engaging, and was able to convey ideas and figures one wouldn't normally stumble across in their daily lives. With the group's project being a real-life simulation of choosing what method to get to a certain destination, understanding how to use maps, increasing difficulty of commute as a representation of how hectic real-life public transportation can get, this computer game is one of the best ways to achieve a goal of raising awareness towards public transportation.

III. Project Description

Sustainable Seekers is an engaging Java-based 2D game that revolves around the themes of SDG 9 (Industry, Innovation, and Infrastructure) and SDG 11 (Sustainable Cities and Communities). The game presents players with a unique challenge: navigate through an eco-friendly virtual city by strategically finding the shortest routes to sustainable locations, all while overcoming various obstacles and collecting rewarding items. By emphasizing the use of sustainable transportation options such as walking, cycling, or public transportation, players not only have fun exploring the city but also gain valuable insights into the benefits of eco-friendly travel. The game offers a range of additional features to enhance the gaming experience, including an interactive map that aids in navigation, a progressive level system to increase difficulty and engagement, and exciting obstacle challenges that keep players on their toes. With Sustainable Seekers, players can delve into the world of sustainability and experience firsthand the importance of SDG 9 and SDG 11 in creating a better and more sustainable future.

IV. Deliverables

Plan	Description	Time
Game Prototype	A functional prototype code of Sustainable Seekers showcasing the	July 2 - 8, 2023

	gameplay mechanics, interactive map, level progression, and obstacle challenges.	
Design Documentation	A document outlining the game design, including the gameplay mechanics, game flow, rules, and user interface. This will also serve as a reference throughout the project for its creators.	July 2 - 8, 2023
User Testing Reports	Feedback reports summarizing the findings from user testing sessions. This will contain observations, opinions, and suggestions of the users, to help refine and improve the gameplay mechanics.	July 9 - 15 2023
User Documentation	A user manual explaining the gameplay mechanics, controls, objectives, and tips for playing Sustainable Seekers to help users navigate the game effectively and understand its mechanics and goals.	July 16 - 22 2023
Presentaion and Demonstration	Ideally, a presentation and demonstration showcasing the gameplay mechanics of Sustainable Seekers, including an overview of the game concept, the significance of sustainable behaviors, and how the mechanics align with the project's objectives.	July 23 - 29 2023
GitHub Repository: https://github.com/tayshbokki/oo3BatmanProject		

V. Evaluation

For the criteria, The project has adopted the evaluation system for Programming Assignments from Texas State University (https://userweb.cs.txstate.edu/~v_m137/cs3354_fall2016/Grading%20Rubric.pdf). The project has decided to use this evaluation system due to the extensive and definitive metrics and measures provided.

VI. Conclusion

In conclusion, the Sustainable Seekers project is significant because it addresses the urgent need for eco-friendly urban development and sustainable transportation methods. It increases awareness, educates players, and encourages positive behavior change through an entertaining gaming experience. Sustainable Seekers vividly illustrates the difficulties and advantages of eco-friendly travel by submerging players in a virtual city environment, fostering a deeper comprehension of how transportation decisions affect urban development. The project aims to foster long-lasting behavior change that transcends the virtual world by actively engaging players and encouraging them to adopt sustainable transportation methods.

Sustainable Seekers directly supports SDGs 9 (Industry, Innovation, and Infrastructure) and 11 (Sustainable Cities and Communities) by promoting sustainable practices. It addresses problems that are common in urban areas, like pollution, traffic, and ineffective transportation systems, and has a positive effect on building greener, healthier, and more sustainable cities and communities. The project encourages people to support eco-friendly travel by empowering them with interactive gameplay, educational components, and quantifiable metrics. This helps to accelerate the transition to a future where our urban environments are more resilient and sustainable.

VII. References

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